UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,299	05/15/1998	Frank D. Guffey	WRIPLASTIC-Div	9989

7590 12/24/2002

Santangelo Law Offices PC
125 South Howes Third Floor
Fort Collins, CO 80521

EXAMINER
GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
1764	12

DATE MAILED: 12/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/735,299	GUFFEY ET AL.	
	Examin r	Art Unit	
	Walter D. Griffin	1764	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 23-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 23-32* is/are rejected.

7)☒ Claim(s) *33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *08/525,639* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: On essentially every page of the specification including the claims, holes punched in the paper to assemble the file have obscured and/or removed words from the first and/or second lines of every page.

Appropriate correction is required.

A substitute specification including the claims is required pursuant to 37 CFR 1.125(a) because a large number of amendments is required to correct the problem caused by the holes.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and must be accompanied by: 1) a statement that the substitute specification contains no new matter; and 2) a marked-up copy showing the amendments to be made via the substitute specification relative to the specification at the time the substitute specification is filed.

The substitute specification filed October 8, 2002 has not been entered because it does not conform to 37 CFR 1.125(b) because a marked-up copy of the substitute specification has not been supplied in addition to the clean copy. The substitute specification contains additional subject matter that was not of record as of the filing of the substitute specification. For example, the substitute specification contains claims 23-33 that are contained in the amendment filed on

October 8, 2002. Therefore, the substitute specification must be filed under 37 CFR 1.125(b) and must be accompanied by: 1) a statement that the substitute specification contains no new matter; and 2) a marked-up copy showing the amendments to be made via the substitute specification relative to the specification at the time the substitute specification is filed.

Claim Objections

Claim 33 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to the other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claim 33 has not been further treated on the merits.

Claim 2 is objected to because of the following informalities: In line 4 of claim 2, the word "then" should be "than". Appropriate correction is required.

Response to Amendment

The rejections under 35 U.S.C. § 112 and 102 as described in paper no. 7 have been withdrawn in view of the amendment filed on October 8, 2002.

New rejections follow.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-16, 23, 24, 27, 28, and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 3-16, 23, 24, 27, and 28 are indefinite because step c of claim 1 is unclear. It is unclear what content is being controlled.

Claim 24 is also indefinite because the expression "said step of controlling the free radical content" lacks proper antecedent basis in claim 1. Claim 1 does not recite the controlling of the free radical content.

Claim 27 is also indefinite because the expressions "the free radical initiator" and "said oil" lack proper antecedent basis in claim 1.

Claim 28 is also indefinite because the use of the word "employed" does not further identify how or how not a free radical catalyst precursor is used in the process. Therefore, the scope of the claim cannot be ascertained.

Claim 32 is indefinite because it is unclear what substances are encompassed by the expression "normally-solid specialty substances".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-6, 14-16, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imparato et al. (4,327,237).

The Imparato reference discloses a process of decomposing plastic. The process comprises forming a solution of the plastic in mineral oil and thermally cracking the solution at a temperature between 250° and 350°C for 15 to 45 minutes. The free radical content of the solution is controlled by adding a substance to the solution. See col. 2, lines 13-53.

The Imparato reference does not disclose the use of waste plastic, does not disclose the temperature of claim 4 and does not disclose the oils of claims 15 and 16.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Imparato by using waste plastic because the process would result in the production of the desired products regardless of the source of the plastic as long as the plastic has the desired composition.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Imparato by utilizing a temperature of 375°C because this temperature is only slightly higher than that which is disclosed and therefore its use would still be expected to result in effective thermal cracking.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Imparato by utilizing the claimed oils as the solvent because these claimed oils are similar to those disclosed and therefore would be expected to be effective in forming the desired solution.

In the event that the Imparato reference does not disclose or suggest the collecting of the by products of the depolymerization step, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Imparato by collecting the products because desired products from any process are typically recovered.

Claims 1-6, 9, 10, 14-16, 23-26, and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott (3,700,615) in view of Vanlautem et al. (4,145,526).

The Scott reference discloses a process for decomposing waste rubber. The process comprises mixing the rubber with a hydrocarbon to form a solution. The hydrocarbon can be an oil such as a fuel oil. The solution also contains a free radical initiator. The free radical initiator liberates free radicals upon heating and the amount to be added is determined by experiment. Experimentation would necessarily include measurements of process conditions. The decomposition occurs at temperatures not in excess of about 370°C. See col. 2, lines 31-58, 70, and 71; col. 3, lines 1-7 and 69-75; and col. 4, lines 1-22 and 49-62.

The Scott reference does not disclose the waste plastic, does not disclose the specific oils of claims 2, 15, and 16, does not disclose recovering distillate, and does not disclose a temperature of about 375°C as in claim 4.

The Vanlautem reference discloses depolymerization of plastics can be achieved by dissolving polymers in a solvent that contains compounds that generate free radicals. The mixture is then thermally treated. See col. 1, lines 17-22.

The Chen reference discloses the distillation of the product resulting from the depolymerization of rubber and plastic. See the Figure.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Scott by depolymerizing plastics such as those claimed as suggested by Vanlautem because plastics would be expected to be equivalently processed as compared to the rubber of Scott thereby resulting in the production of valuable products.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Scott by recovering products including those claimed by distillation as suggested by Chen because desired products will be recovered and can then be used for any desired purpose.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Scott by utilizing the claimed oils as the solvent because these claimed oils are similar to those disclosed and therefore would be expected to be effective in forming the desired solution.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Scott by utilizing a temperature of 375°C because this temperature is only slightly higher than that which is disclosed and therefore its use would still be expected to result in effective thermal cracking. Additionally, Scott discloses an upper temperature limit of about 370°C. The use of word "about" indicates that temperatures slightly higher than 370°C (e.g., 375°C) would be expected to be effective.

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott (3,700,615) in view of Vanlautem et al. (4,145,526) as applied to claim 1 above, and further in view of Coenen et al. (4,642,401).

The previously discussed references do not disclose recycling of the solvent.

The Coenen reference discloses a process for producing liquid hydrocarbons from waste plastic. The process comprises treating the plastic with a solvent and includes the recycling of the solvent. See claim 1.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the previously discussed references by recycling the solvent as disclosed by Coenen because the economics of the process will be improved since costs will be reduced.

Response to Arguments

The argument that the Scott reference does not appear to be directed to the depolymerization of the present invention is not persuasive because the present claims do not appear to exclude the depolymerization as defined by Scott.

The other arguments are believed to be addressed in the modified rejections described above.

Allowable Subject Matter

Claims 7, 8, 27, and 28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not disclose adding the claimed plastic material to assure an appropriate amount of free radical precursor in the mixture, does not disclose the catalyst precursor as in claim 27, and does not disclose the combination of the specific plastic and no separate free radical catalyst precursor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
December 19, 2002